# A NEW SPECIES OF THE LEAFHOPPER GENUS *BALEJA* MELICHAR, 1926 FROM COLOMBIA (HEMIPTERA: CICADELLIDAE: CICADELLINAE)[1]

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ABSTRACT: A new species of *Baleja* Melichar, 1926, is described and illustrated based on specimens from Colombia (Nariño and Valle del Cauca departments). *Baleja bella* sp. nov. can be distinguished from other species of the genus mainly by the color pattern and male genital structures. The new species presents on the head a pair of peculiar lenticular sclerites, delimited by the loral sutures and adjacent to the frons, which are for the first time reported for *Baleja*. Taxonomic notes on the genus are included.

KEY WORDS: Hemiptera, Auchenorrhyncha, Membracoidea, Cicadellini, *Baleja*, sharpshooter, morphology, Colombia

The genus *Baleja* Melichar, 1926, currently comprises five species and is recorded from Nicaragua, Costa Rica, Panama, Colombia (including Gorgona Island), French Guiana, Ecuador, Bolivia, and Brazil (Young, 1977). The known species are: *B. discordans* Young, 1977, *B. flavoguttata* (Latreille, 1811), *B. marginula* (Osborn, 1926), *B. rufofasciata* (Distant, 1879), and *B. serratula* (Breddin, 1902). According to Young (1977), *Baleja* belongs to the *Paromenia* complex of genera. It shares with two other genera of this complex, *Jozima* Young, 1977, and *Parathona* Melichar, 1926, a peculiar feature: the apical margin of the clypeus is concave and has a pair of lateral lobes (Fig. 2). Specimens of *Baleja* are also superficially similar to those of *Diedrocephala* Spinola, 1850, and *Lebaja* Young, 1977.

*Baleja* can be distinguished from the aforementioned genera, as well as from other Cicadellini genera, by the following combination of characters (Young, 1977): (1) head (Fig. 1) well produced with anterior margin narrowly rounded to acutely subangular in dorsal view, (2) ocelli (Fig. 1) located slightly behind a line between anterior eye angles (well behind in *Parathona*), (3) crown without a median fovea (with a fovea in *Lebaja*), (4) clypeus (Fig. 2) with apical margin concave and with a pair of lateral lobes (convex in *Diedrocephala*), (5) forewings (Fig. 3) with apex convex (concave in *Diedrocephala*), (6) paraphyses absent or vestigial, (7) aedeagus (Fig. 8) with shaft directed dorsally or posteriorly (decurved ventrally in an acute process in *Jozima*).

In this paper, a new Colombian species of *Baleja* is described and illustrated based on a male and female from Tumaco, Department of Nariño, and an additional female from Obando, Department of Valle del Cauca. Taxonomic notes comparing the new species with the other known species of the genus are added.

[1] Received on July 4, 2007. Accepted on August 14, 2007.

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Mailed on June 23, 2008

The presence in the new species of a pair of peculiar lenticular sclerites on the face is briefly discussed.

## METHODS

Techniques for preparation of male and female genital structures follow those of Oman (1949) and Mejdalani (1998), respectively. The dissected parts are stored in microvials with glycerin and attached below the specimens, as suggested by Young and Beirne (1958). The morphological terminology follows mainly Young (1977), except that of the head, which follows Hamilton (1981), as suggested by Mejdalani (1998). The specimens herein described are deposited in the following institutions: Instituto de Ciencias Naturales, Universidad Nacional de Colombia (UNCB; Bogotá); Facultad de Ciencias Agrícolas, Universidad de Nariño (FAUN; Pasto); and Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ; Rio de Janeiro).

## SYSTEMATIC ENTOMOLOGY

### *Baleja bella* NEW SPECIES

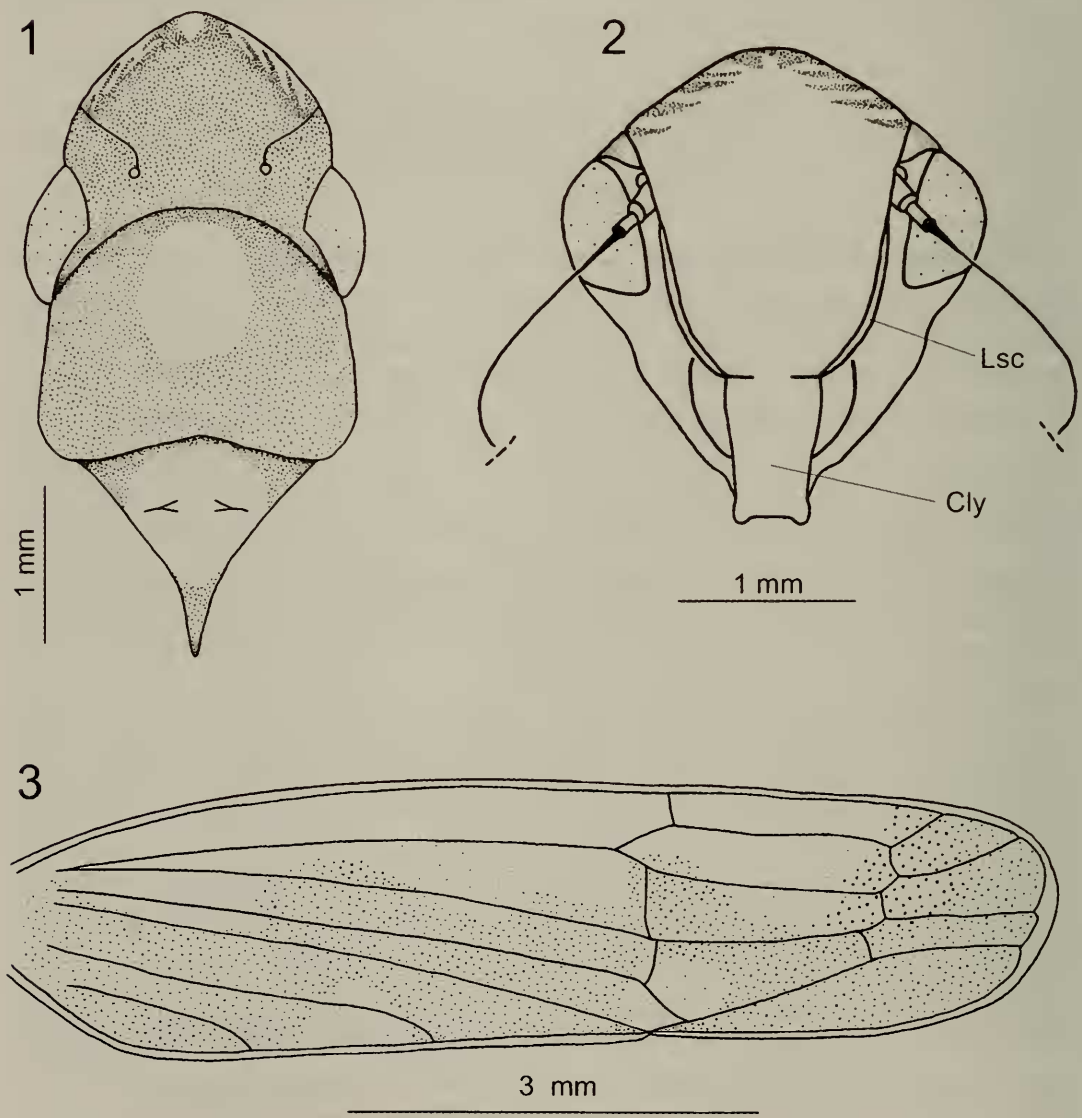
(Figures 1-14)

**Description of the Holotype**. Length 10.6 mm. Head (Fig. 1) well produced anteriorly, deltoid; anterior margin rounded in dorsal view; without carina at transition from crown to frons. Ocelli (Fig. 1) located slightly behind imaginary line between anterior eye angles; each approximately equidistant from adjacent eye angle and median line of crown. Disk of crown (Fig. 1) flat; without median fovea, sculpturing or conspicuous setae. Frontogenal sutures (Fig. 1) clearly extending onto crown. Antennal ledges (Fig. 1) not protuberant in dorsal view; anterior margin convex and oblique in lateral view. Frons convex; muscle impressions distinct but not conspicuous. Epistomal suture (Fig. 2) incomplete medially. Clypeus (Fig. 2, Cly) with apical margin shallowly emarginate between apicolateral lobes. Loral sutures forming pair of lenticular sclerites (Fig. 2, Lsc) adjacent to frons.

Thorax (Fig. 1) with pronotal width less than transocular width of head; lateral margins convergent anteriorly; dorsopleural carinae complete; posterior margin concave. Mesonotum (Fig. 1) not striate behind transverse sulcus. Forewings (Fig. 3) with four apical cells; veins not very distinct or elevated; texture coriaceous and without sculpturing. Hindlegs with femoral setal formula 2:1:1; length of first tarsomere greater than combined length of two more distal tarsomeres and with two parallel rows of small setae on plantar surface.

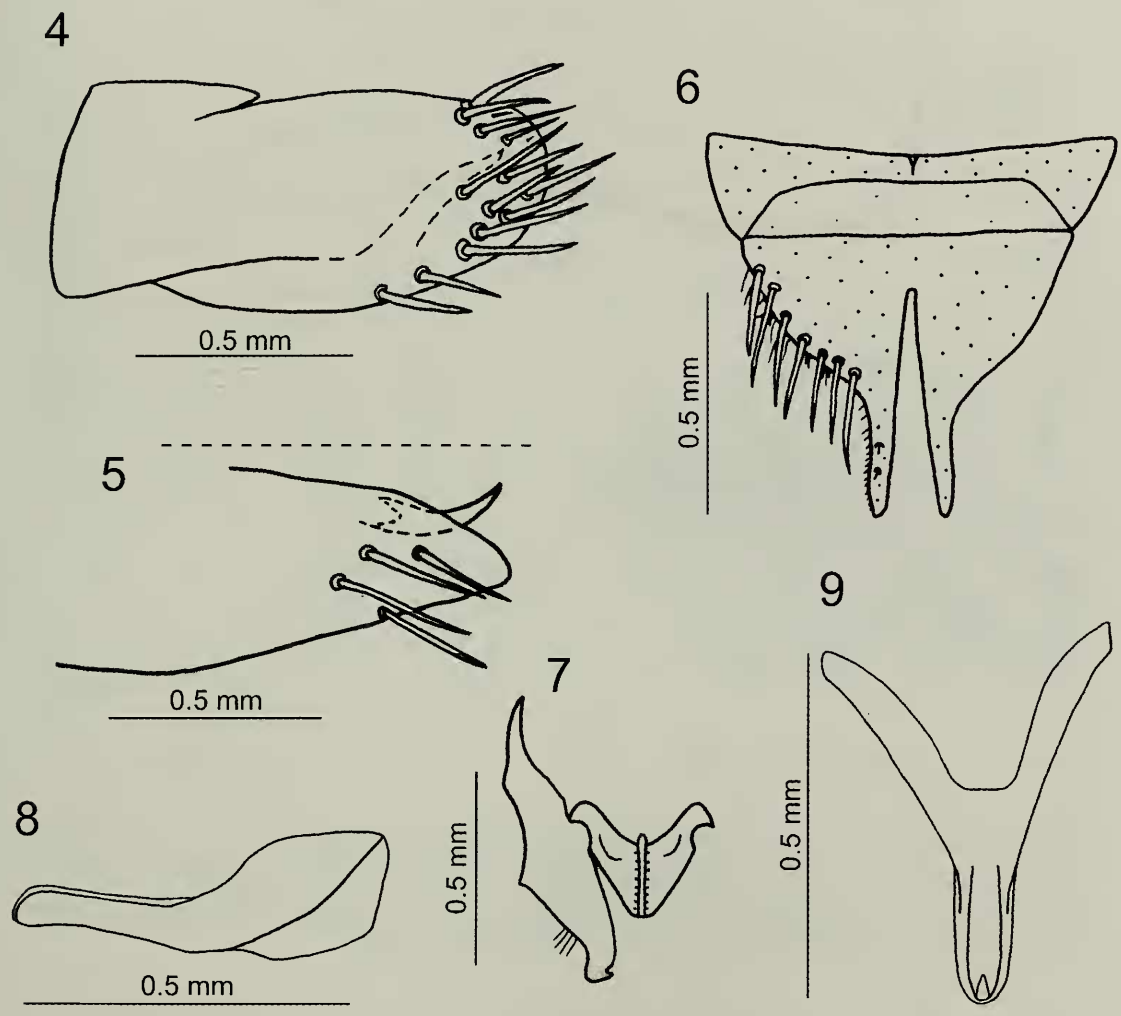
Male genitalia: Pygofer (Fig. 4) moderately produced with apical margin convex in lateral view; with large macrosetae along posterior margin and extending anteroventrally for short distance; inner surface with large spiniform process (Figs. 4 and 5) located on posteroventral portion and extending posterodorsally. Valve (Fig. 6) with posterior margin strongly broadly concave, separated from subgenital plates by trapezoidal membranous area. Subgenital plates (Fig. 6) tri-

angular in ventral view; fused basally; short, not extending posteriorly as far as pygofer apex; with uniseriate macrosetae and with some microsetae along lateral margins. Styles (Fig. 7) extending posteriorly beyond apex of connective in dorsal view; with small median outer projection; without preapical lobe; with small number of setae on outer preapical margin; apex with very small, sharp projection directed inwards. Connective (Fig. 7) Y-shaped in dorsal view; anterior arms short; stalk with median dorsal keel. Aedeagus (Figs. 8 and 9) symmetrical, small and slender; without processes; truncate posteriorly in lateral view (Fig. 8); basal apodemes well developed, strongly divergent in ventral view (Fig. 9); gonopore (Fig. 9) located on apex.

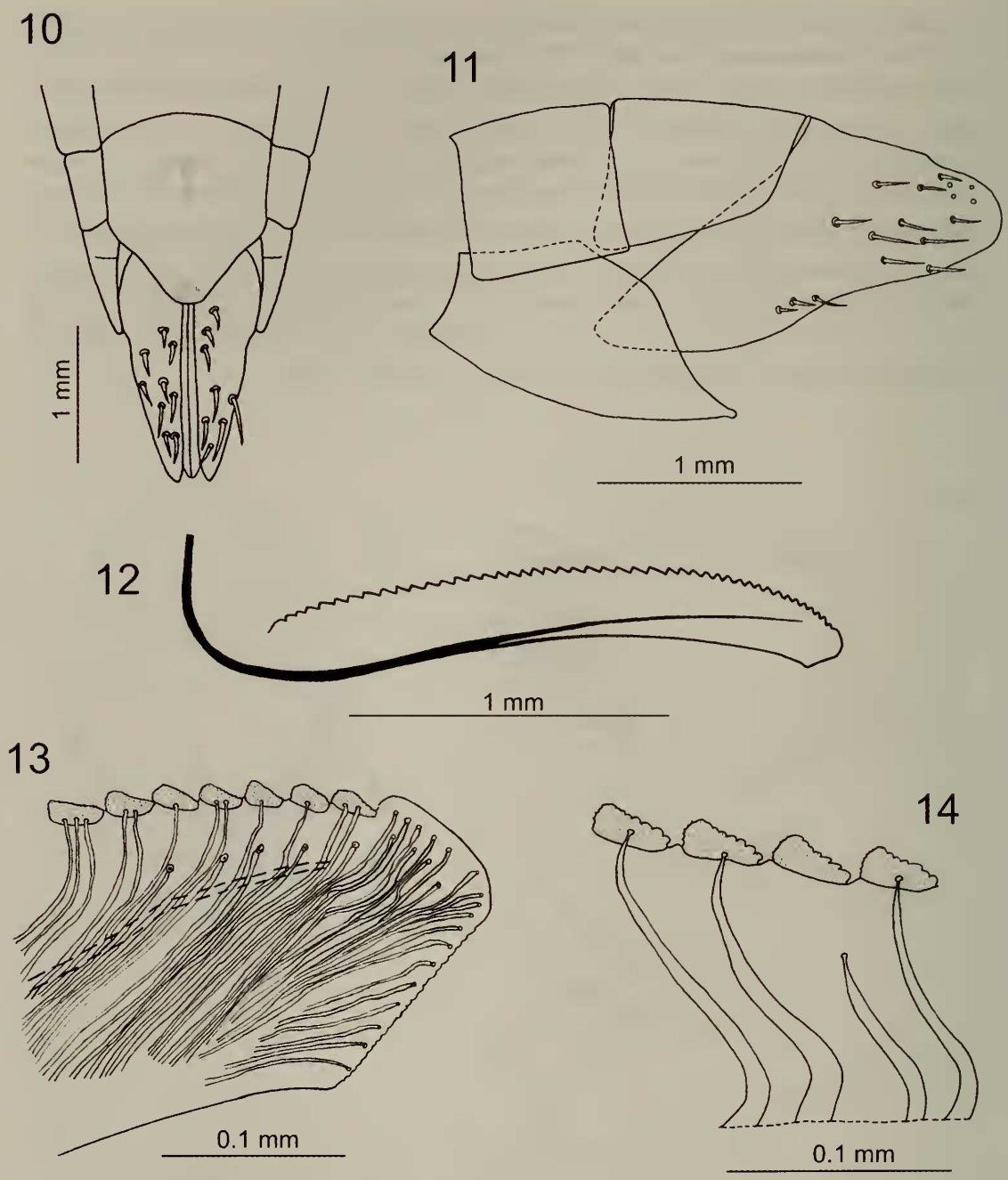



Figures 1-3. *Baleja bella* sp. nov. Fig. 1, crown, pronotum, and mesonotum, dorsal view. Fig. 2, head, frontal view. Fig. 3, forewing. Cly: clypeus. Lsc: lenticular sclerite.

Color: Anterior dorsum (Fig. 1) dark brown to black; anterior margin of crown with small median spot and small lateral stripes (extended from face), brownish-yellow; pronotum (Fig. 1) with large median yellow spot on anterior half; mesonotum (Fig. 1) with large median yellow spot covering most of its surface. Forewings (Fig. 3) brown; costal margin dull brownish-yellow (partially translucent) forming three conspicuous subtriangular projections on corium; with yellow elongate macula above median (second) projection; with red oblique macula on posterior portion of distal (third) projection; one yellow transcommissural spot on median portion of clavus; one yellow spot on corium adjacent to claval apex. Face (Fig. 2) and lateral and ventral portions of thorax mostly yellow to brownish-yellow. Abdomen mostly yellow in ventral view.




Figures 4-9. *Baleja bella* sp. nov., male genitalia. Fig. 4, pygofer, lateral view. Fig. 5, pygofer, ventral view. Fig. 6, valve and subgenital plates, ventral view (setae not shown on left plate). Fig. 7, style and connective, dorsal view. Fig. 8, aedeagus, lateral view. Fig. 9, aedeagus, ventral view.




Figures 10-14. *Baleja bella* sp. nov., female genitalia. Fig. 10, apical portion of abdomen, ventral view. Fig. 11, apical portion of abdomen, lateral view. Fig. 12, second valvula of ovipositor, general lateral view. Fig. 13, apical portion of second valvula, lateral view. Fig. 14, teeth on median third of second valvula, lateral view.

**Female Paratypes** (n = 2, one with spread forewings). Length 10.6 mm (n = 1, with wings in rest position). Forewings in rest position exceeding apex of ovipositor. Genitalia: Abdominal sternite VII (Fig. 10) with lateral margins slightly convergent posteriorly on basal half and strongly convergent posteriorly

on apical half, the latter forming triangular projection; apex narrowly rounded. Pygofer (Figs. 10 and 11) moderately produced posteriorly in lateral view; posterior margin convex; with macrosetae on apical half and extending anteriorly along ventral margin. Second valvulae of ovipositor (Figs. 12-14) with preapical prominence distinct in lateral view; dorsal margin of shaft convex, with subtriangular teeth from basal portion to apex; each tooth (Fig. 14) bearing denticles; apical portion of shaft with larger denticles on ventral margin and minute ones on dorsal margin; apex of shaft (Fig. 13) narrowly rounded.

**Type Data:** Colombia. Holotype male with label "III-30-88 \ [San Andrés de] Tumaco (N [Nariño Department]) \ Rastrojo \ H. Castillo" (UNCB). One female paratype, same data as holotype (FAUN). One female paratype, "III/94 \ Motitui \ Obando [Valle del Cauca Department]" (MNRJ).

## DISCUSSION

*Baleja bella* sp. nov. differs from other species of the genus by the following combination of features: crown with (1) an apical yellow spot and (2) small lateral stripes (extended from face) on anterior margin (Fig. 1); pronotum with (3) a median yellow spot on anterior half and with (4) lateral margins convergent anteriorly (Fig. 1); forewings with (5) costal margin brownish-yellow forming three conspicuous subtriangular projections on corium, with (6) yellow elongate macula above median projection, with (7) red oblique macula on posterior portion of distal projection, (8) one yellow transcommissural spot on median portion of clavus, (9) one yellow spot on corium adjacent to claval apex (Fig. 3); male pygofer with (10) its apical portion rounded, with (11) macrosetae along posterior margin and extending anteroventrally for short distance, and with (12) a spiniform process arising from its inner ventral portion and extending posterodorsally (Figs. 4 and 5); male valve (13) with posterior margin strongly broadly concave, separated from subgenital plates by a trapezoidal membranous area (Fig. 6); connective (14) Y-shaped (Fig. 7); (15) aedeagus small, simple, without processes (Figs. 8 and 9); female abdominal sternite VII with (16) lateral margins strongly convergent posteriorly on apical half, forming triangular projection, and with (17) apex rounded (Fig. 10).

The color pattern of *B. bella* is similar to those of *B. flavoguttata* (type-species), *B. serratula*, and *B. discordans* (Fowler, 1900; Breddin, 1902; Young, 1977). The above-mentioned features of the male genitalia will readily distinguish *B. bella* from these three species. The pygofer in *B. flavoguttata* has a concave posterior margin and the aedeagal shaft is curved dorsally and bears a pair of filamentous processes (Young, 1977). The latter processes are also present in *B. serratula* (Young, 1977). The pygofer in *B. discordans* has a dentiform projection on posterior margin and the aedeagus has one median, unpaired ventral process that is flattened and with lateral margins dentate (Young, 1977). None of these features are observed in the new species, in which the pygofer has a simple, convex posterior margin and bears a spiniform process arising from its inner ventral portion (Fig. 4), and the aedeagal shaft is small and has no processes (Fig.

8). Due to the absence of aedeagal processes, *B. bella* keys to *B. rufofasciata* in Young's (1977) key to the species of the genus (couplet 1). The latter species, which has at least four color varieties, has no pygofer processes (Young, 1977).

Two peculiarities are observed in the head of *B. bella*. One, the concave apex of clypeus with a pair of lateral lobes (Fig. 2, Cly), has already been reported by Young (1977) for the other species of *Baleja*. The other, the presence on face of a pair of elongate lenticular sclerites positioned between the gena and the frons (Fig. 2, Lsc), has not been reported for this genus. These sclerites are separated from the gena by the loral suture and from the frons, by the frontogenal suture (see Hamilton, 1981 and Mejdalani, 1998). Morphologically, they appear to be homologous with the upper portion of the lorum as recognized by Hamilton (1981) in *Melampsalta* Amyot, 1847 (Cicadidae) and *Evacanthus* Le Peletier and Audinet-Serville, 1825 (Cicadellidae). Similar sclerites were reported by Young (1977) in several genera of Cicadellini, mostly from Central America (e.g., *Apogonalia* Evans, 1947, *Camaija* Young, 1977, *Hadria* Metcalf and Bruner, 1936, and *Graphogonalia* Young, 1977). Such lenticular sclerites are apparently an uncommon feature. Considering that many Cicadellini genera are very similar externally, we believe that these sclerites should be searched for in other South American members of the tribe because their presence in a given species significantly reduces the possibilities of generic placement.

## ACKNOWLEDGMENTS

Dr. Tito Bacca (Facultad de Ciencias Agrícolas, Universidad de Nariño) has kindly allowed us to study a small collection of Colombian sharpshooters under his care. The manuscript benefited from the useful comments of Alcimar Carvalho and Rachel Carvalho (Museu Nacional, Universidade Federal do Rio de Janeiro) and three anonymous reviewers. This research was supported in part by Fundação Universitária José Bonifácio (FUJB). A PIBIC fellowship from Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) to LGNR is acknowledged.

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